a plurality of substantially identical, KxK signal interconnect modules wherein each contains K^2 input lines, where K<N1, and couples them to K^2 output lines wherein a separate signal path couples each input line to a respective output line of each module

wherein each KxK module includes:

a body portion which includes a plurality of LxL signal coupling networks with L<K;

K input ports coupled to the body portion;

K output ports coupled to the body portion; and

a plurality of signal paths, carried by the LxL signal coupling networks, the signal paths couple the input ports to the output ports.--

--66. (Amended) A signal coupling network for coupling any one of N1 inputs to any one of N2 outputs comprising:

a plurality of substantially identical, KxK signal interconnect modules wherein each contains K^2 input lines, where K<N1, and couples them to K^2 output lines

wherein N1 inputs comprise $\frac{N1}{K}$ groups of signal carriers coupled to a corresponding number of KxK modules.

Please add the following new claims:

--67. An interconnect network comprising:

a plurality of KxK modules wherein each module comprises K^2 inputs, K^2 outputs and K^2 different, passive signal carriers which extend between and couple each of the K^2 inputs to a respective one of K^2 outputs.--

--68. A network as in claim 67 wherein each input has a respective output coupled thereto by a respective signal carrier which is selected from a class which includes optical paths and electrical paths, and wherein the plurality of KxK modules provides N input ports, K<N, and $\frac{N}{K}$ input groups of signal carriers are coupled to a corresponding number of KxK modules.--

--69. A network as in claim 67 wherein N1 inputs can be coupled to N2 outputs, in the absence of signal processing therebetween, by $\left(\frac{N1}{K} \times \frac{N2}{K}\right)$ modules.--

--70. A network as in claim 67 wherein each KxK module comprises a plurality of $\frac{K^2}{L^2}$ LxL modules, L<K.--

--71. A signal coupling network for coupling any one of N1 inputs to any one of N2 outputs comprising:

a plurality of substantially identical, KxK signal interconnect modules wherein each contains K^2 input ports, where K<N1, and couples them to K^2 output ports wherein a separate, passive, signal carrier couples each input port to a respective output port of each module.--

--72. A network as in claim 71 wherein N1 inputs comprise $\frac{N1}{K}$ groups of signal carriers coupled to a corresponding number of KxK modules.--

--73. A network as in claim 71 wherein N1 inputs comprise $\frac{N1}{K}$ groups of signal carriers coupled to $\left(\frac{N1}{K}\right)^2$, KxK modules.--

--74. An NXM multi-level interconnect comprising:

a plurality of $\left(\frac{NM}{K^2}\right)$ of substantially identical KxK passive interconnect modules K<N, each module having K^2 signal carriers, wherein $\frac{N}{K}$ input groups and $\frac{M}{K}$ output groups of signal carriers are coupled to/from the KxK modules and wherein a signal path extends between